

**ATTENTION MANAGER FOR OCCUPYING
THE PERIPHERAL ATTENTION OF A
PERSON IN THE VICINITY OF A DISPLAY
DEVICE**

This application is a continuation of U.S. patent application Ser. No. 09/372,399, entitled ATTENTION MANAGER FOR OCCUPYING THE PERIPHERAL ATTENTION OF A PERSON IN THE VICINITY OF A DISPLAY DEVICE, filed Aug. 10, 1999, now abandoned, which is a continuation of U.S. patent application Ser. No. 08/620,641, filed Mar. 22, 1996, now U.S. Pat. No. 6,034,652.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the engagement of the peripheral attention of a person in the vicinity of a display device such as the display monitor of a computer.

2. Related Art

Information providers of all sorts have an interest in presenting their information to information consumers and, in particular, to information consumers who may, or do, have an interest in the particular information provided by the particular information provider. At the same time, information consumers have an interest in accessing a wide variety of information and, in particular, information in which the information consumer may, or does have an interest. Given the extent to which computers now permeate society, and particularly in view of the escalation of networking of those computers in various ways, there is increasing recognition of the capability of using computers, and, in particular, computers (and other devices) that are interconnected in a network, as an information dissemination tool that can satisfy the interests of both information providers and information consumers.

For example, information providers have used public computer networks (e.g., the Internet) and private computer networks (e.g., commercial online services such as America Online, Prodigy and CompuServe) to disseminate their information. This information can be displayed to a computer user having access to the network directly in response to a request from the user or indirectly (i.e., without request by the user) as a result of another action taken by the user. While these methods of information dissemination and acquisition can be effective, they do not exhaust the possibilities.

In a different vein, historically, computers have frequently included screen saving mechanisms ("screen savers") intended to prevent the phosphors of a computer display screen from burning out when the same image remains on the screen for a long period of time, such as might occur during a long period of inactivity while the computer is operating. As computer display screen technology has progressed, the use of screen savers to preserve the display screen has become increasingly unnecessary. However, the use of screen savers has continued—even proliferated—likely due to the aesthetic or entertainment value provided by the imagery of many screen savers. Further, the use of "wallpaper" (i.e., a pattern generated in the background portions on a computer display screen) in computer display screens has also arisen, largely one would suspect because of the aesthetic or entertainment value of the wallpaper imagery. While the use of screen savers and wallpaper with computer displays appeals to many users because of the imagery they present to the user, screen savers and wallpaper have not heretofore been used as a means to convey infor-

mation from information providers to computer users. Further, screen savers and wallpaper have previously been implemented as relatively simple, self-contained computer application programs that are not typically integrated with other application programs or other aspects of computer operation. In particular, screen saver and wallpaper application programs have not been constructed to enable retrieval of display content from a remote location via a computer network.

SUMMARY OF THE INVENTION

An attention manager according to the invention presents information to a person in the vicinity of a display device in a manner that engages the peripheral attention of the person. Often, the display device is part of a broader apparatus (e.g., the display device of a computer). Generally, the attention manager makes use of "unused capacity" of the display device. For example, the information can be presented to the person while the apparatus (e.g., computer) is operating, but during inactive periods (i.e., when a user is not engaged in an intensive interaction with the apparatus). Or, the information can be presented to the person during active periods (i.e., when a user is engaged in an intensive interaction with the apparatus), but in an unobtrusive manner that does not distract the user from the primary interaction with the apparatus (e.g., the information is presented in areas of a display screen that are not used by displayed information associated with the primary interaction with the apparatus).

The information is embodied as one or more sets of content data. The sets of content data represent sensory data; typically, the sensory data is either video or audio data. Each set of content data is formulated by a content provider and made available for use by an attention manager according to the invention. Each content providing system can provide more than one set of content data. The content providing systems provide user interface tools that enable a particular set of content data to be requested. Once one or more sets of content data has been acquired, a content display system integrates scheduling information for all sets of content data to produce a schedule according to which an image or images corresponding to the sets of content data are displayed on a display device associated with the content display system.

A set or sets of instructions for enabling a display device to selectively display an image or images generated from a set of content data are also made available for use by the content display systems. Typically, the instructions enable images generated from content data to be displayed automatically, without user intervention, in a predetermined manner, thereby enhancing the capability of the invention to occupy the user's peripheral attention. Further, the attention manager can be implemented so that the instructions are automatically acquired (or updated, if necessary) each time a user requests acquisition of a set of content data, thereby making acquisition of the instructions transparent to the user of the attention manager and thus increasing the ease of use for the user. The instructions can include application instructions, control instructions and content data acquisition instructions. The application instructions can include operating instructions for beginning, managing, and terminating operation of the attention manager on a content display system, content display system scheduling instructions for scheduling the display of content data on a content display system, and installation instructions for installing the operating instructions and content display system scheduling instructions on a content display system. The control instructions can include display instructions for enabling